

18. *Melaspilea metabola*, Nyl.
Section of portion of thallus with apothecia.
a, Ascus with spores. *b*, Spore.
19. *Squamaria perrugosa*, Nyl. (young state.)
Section of portion of thallus with apothecia.
* Section of apothecia. *a*, Ascus with spores. *b*, do. do. *c*, do. do.
20. *Squamaria perrugosa*, Nyl., var. *neglecta*, Knight.
Ascus with spores.

ART. LIV.—*Description of a new Lichen* (*Stereocaulon buchanani*).

By JAMES STIRTON, M.D.*

Plate XXV.

[*Read before the Wellington Philosophical Society, 21st November, 1874.*]

A FEW days ago I received from Mr. J. Buchanan of the Colonial Museum, Wellington, a lichen which presents peculiarities of internal organization of sufficient importance to warrant a special notice. As these peculiarities are somewhat anomalous, the absence of spermogonia in the specimens is so far a matter of regret, inasmuch as its generic place is rendered to a certain extent doubtful.

Of late these secondary organs of fructification have been occupying considerable attention, and the modifications in size and shape of the spermatia, as well as the conformation and appearance of the spermogonia themselves, have served, in doubtful cases, as a means of discriminating genera, more especially *Lecanora* from *Lecidea*.

The lichen in question occupies an isolated position, and presents affinities to three genera, viz :—*Gomphillus*, *Stereocaulon* and *Bæomyces*.

In the extreme length and tenuity of its spores, the former dimension reaching almost the limit, in this respect, amongst lichens; in the tenacious stiff gelatine which prevades the hymenium, and almost conceals the paraphyses until the application of liq. potassæ, which softens if it does not dissolve this gelatine; as well as in the presence of longitudinal cavities apart from the thecæ, this lichen shows considerable affinities to the curious and anomalous genus *Gomphillus*. On the other hand the apothecia, in their external conformation and, more especially, in the fact that occasionally very short stipites are present, coated with granules, betray a manifest relationship to *Stereocaulon*, with which I have meanwhile united it. This relationship is brought out all the more through the variety of *St. condensatum*, Hffm., where the apothecia are found also sessile on mosses, and have at first sight much the aspect of those of a *Lecidea*.

During the current year I detected on Ben Lawers, Perthshire, a form of

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this variety of *St. condensatum*, where the apothecia do not betray the slightest traces of stipites, and which, in the absence of intermediate states, I am strongly inclined to elevate to the rank of a species, more especially as the spores are shorter and thicker than any belonging to this species hitherto seen.

In *St. strictum*, Bab., as well as in one or two others, are seen spores, very much resembling those of the present lichen, although not more than half their length. The reactions by means of iodine on the hymeneal gelatine also correspond generally to those seen in species of the same genus.

The relationship of this lichen to *Bæomyces* is less obvious, and, but for Dr. Nylander's assertion, (Synop. p. 175) and a certain primâ facie resemblance, I would not have mentioned this genus as analogous, indeed in the light of the present plant I can assert, with considerable confidence, that *Gomphillus* has much stronger affinities to *Stereocaulon* than to *Bæomyces*.

In plants such as the present it is extremely foolish to dogmatize in the matter of classification, and we are taught the lesson that nature is not to be cramped and confined by any such well defined limits as our modern classifiers would fain lead us to believe.

Stereocaulon buchanani, Strm.

Thallus tenuis effusus, cinerascens vel cinereo-virescens, e gonidiis conglomeratis mediocribus et filamentis irregularibus, fere omnino constans; apothecia majuscula (latit. 1–2 millim.), sessilia vel elevato-sessilia, interdum conglomerata, fusca (junioribus pallidis et nonnihil turbinatis), convexa et immarginata, intus fusciscentia, textura tenaci cornea. *Sporæ* 8næ, in thecis cylindricis, longissimæ, filiformes, 40–50-septatæ, longit. 0·16–0·22 millim., crassit. circa 0·003–0·004 millim.; paraphyses haud distinctæ. Gelatina hymenialis iodo leviter cærulescens (apicibus thecarum intensius tinctis) dein rufescens.

Thallus thin granular cinerascens or cinereo-virescent effuse, composed almost entirely of conglomerated gonidia of a medium size and an irregular fibrous stroma; apothecia rather above average sessile or elevato-sessile fuscous, in a younger state much paler and then somewhat turbinate, convex and immarginate, fusciscent within and of a tenacious horny texture; spores 8, in cylindrical asci, very long and filiform, 40–50-septate, and measuring 0·16–0·22 by 0·003–0·004 of a millim., paraphyses not distinct. Hymeneal gelatine slightly cærulescent with iodine, the apices of the asci more deeply tinted, the whole assuming afterwards a rufescent tint.

Notes on *Stereocaulon buchanani*, Stirton.

By CHARLES KNIGHT, F.R.C.S., F.L.S.

The valuable report of Dr. Stirton on Buchanan's plant has been brought